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DESCRIPTION OF THE T.C. 125 ABOARD THE MERCURY SIMULATOR

Centre D'essais en Vol Bretigny - sur - ORGE

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16. Abstract

Two distinct phases of the TC.125 aboard the Mercury Simulator were described to pilots at a meeting in 1979. First, a three-hour "hands on" phase, during which the pilot learns to use the new system, and second, a two-hour evaluation phase, during which the pilot analyzes the TC.125 and practices making typical approaches;

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Introduction

Two distinct phases of the TC. 125 aboard the Mercury Simulator were described to pilots during a meeting in early 1979:

1- A three hour "hands on" phase, during which the pilot learns to use the new system. This phase for training and reflex acquisition should be preceded by a detailed briefing and be completely separate from the second phase (it is better to have the two phases on two successive days rather than on the same day).

2- A two hour "evaluation" phase, during which the pilot, who is now familiar with the system, will be able to:

- analyze the advantages and inconveniences of the TC. 125 and be able to assess them within the framework of the activities of the company or service which employs him.
- make a certain number of typical approaches which could be recorded in order to furnish material for operational statistic studies and flight studies for official services as well as furnishing a performance dossier.

These two phases are described in detail in the following pages.

PHASE 1 - HANDS ON

Piloting with the TC. 125 is based on principles which are somewhat different than those of "classic" piloting. Because of this, any pilot called on to evaluate the system - even a very qualified one - should go through the "training" phase. /2*

This "training" phase, should, if possible, follow the program described below.

The first, "hands on" phase, which lasts about three hours, is divided into three parts:

- Part 1 .... Getting accustomed to controlling the various parameters of the TC. 125: slope, incidence, etc.... (Duration: about 0 h 30)
- Part 2 .... Control of the aircraft during visual approach landing (Duration: about 1 h 45)
- Part 3 .... Instrument approaches using the TC. 125 (Duration: about 0 h 45)

These parts are further detailed in the following:

<u>Part 1: Getting the Pilot Accustomed to Flying Using the TC. 125 Symbols.</u>

1.1 Presentation of the Collimator Head and Flight Controller/.

Intensity control on the collimator head.

Flight controller: mode selector/visual display of the parameters/RESET button.

2.2 Slope

Regulating the TC. 125: AAR = maximal angle of incidence) on SET
SPF = 0) and path
RWL/DTK: R.A.S) on CRU

*Numbers in the margin indicate pagination in the foreign text.

Simulator initialization

FL 50 stringer aircraft,
mass 43 T - Vi 2200 kt

1. 1.2.a) Controlling slope by depth. /3

Release the simulator - connect the A.P.: ALT mode.
connect the A/T or instructor.

- Observe the collimator image, aircraft level.
- Using the P.A. PITCH, bring the aircraft to a +2° climb.
- Return to level using PITCH
- Do the same for a descent
- Level

Connect mode.

1.2.b.) Control the precise slope - use the SFP

- Put a +3° slope on the CRU
- Disconnect the A.P.
- Climb on a +3° glide slope
- Return to level. Connect the A.P. on ALT.
- Put a -3° slope on the CRU
- Disconnect the A.P. and descend following the glide slope.
- Return to level.

Connect the A.P. on ALT mode.

1.3. Controlling the angle of incidence

Set the TC. 125: SFP = 0 (SET mode first then CRU.
AAR = 6°5 (

1.3.a) Varying the angle of incidence on a given glide slope ($\bar{\gamma}$) given, $\bar{\gamma}$ = 0.

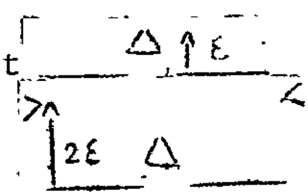
P.A. is connected on ALT mode (therefore $\bar{\gamma}$ = 0)
Instructor brings the aircraft to the ref.
and gives the control to the TC. 125 pilot.

- Maintain angle of incidence at REF.
  Observe the collimator image (AAR triangle, VV, PTT. chevrons)

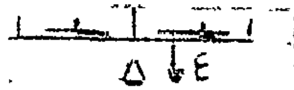
- Power on
  - Observe the movement of the chevron on the total slope
  - Observe the movement of the nose of the aircraft (AAR triangle or reticle
  - Note increase in speed.
- Reduce power and return to ref. α
  - . First bring total slope chevrons well before the vector speed (VV)
  - . Note the stabilization of the α .
  - . Next reduce power still further.
  - . Observe the movement of the total slope chevrons.
  - . Observe the movement of the nose of the aircraft.
  - . Note in passing the reduction in speed.
  - . Then stabilize the aircraft to an angle of incidence equal to ref α.
- Constant incidence turn
  - . Order a turn using the
  - . Maintain the ref. α
  - . Return to horizontal maintaining the ref. α

1:3:c) Look for the ref. α starting from an angle /4
of incidence to the ref. α .

- Use the throttle to maintain a constant slope (here level)
  - . Reduce power to reach aircraft ref. α plus 1°.

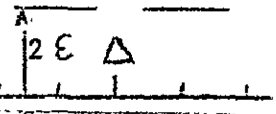


  - . Maintain level with A.P.
    Stabilize on this angle of incidence
  - . Look for the ref. α using double error procedure.
    Then stabilize ref. α .
    (Then disconnect A.P.)
- Using the depth control for a given thrust



. Increase power to attain aircraft ref. -1^{o}

Aircraft level stabilizes angle of incidence.



. Look for the ref. α , the thrust is fixed at the above figure

Consequently there is an action on the depth.

When α_{av} = ref α , stabilize the aircraft at ref. α .

(Then connect the A.P. on ALT mode)

1.4 Stabilize climb or descent /_5

Regulate the TC. 125 as follows: AAR = $6^{o}6$ (Verify on
SFP ≅ 2^{o} (SET pass
RWL/DTK RPASS (on to CRU

1.4.a) Place in a preselected glide slope at a constant angle of incidence = ref. α

Control the slope using the pitch

Control the angle of incidence with the thro throttle

- Look for ref. α on level (if α aircraft ≠ ref. α).
- Stabilize.
- Climb at a $+2^{o}$ (PITCH) while retaining the ref. α (using the throttle)
  (Observe there is no need for setting)
- Return to level (PITCH) and then to ref. (throttle)
  Stabilize on level ref α : connect ALT mode

1.4.b) Descend at a preselected glide slope at a constant angle of incidence.

Post in CRU mode SFP = $-2^{o}5$. Disconnect the A.P.

-Stabilize the aircraft on a descending trajectory from $-2^{o}5$ to ref α .

-Return to level at ref. α (stable at level:

connect P.A. on ALT)

1.5 Changes in configuration

TC. 125 regulation identical. Note m - V ref. EPR base.

1.5.a) Putting up flaps at 12° on level.

Leave the P.A. on ALT mode - to insure the control of the aircraft.

- Stabilize the aircraft at ref. α = $6^{\circ}5$ smooth configuration.
  Note Vi - compare to ref V.
- Adjust the flaps at 3°. Stabilize at ref. α Observe.
- Adjust the flaps at 12°. Look for the ref. α

Note Vi - compare it to ref V + 30

Note EPR - compare it to recommended EPR.

1.5.b) Putting down the landing gear on level. /6

Disconnect the A.P. and check the slope (level) and the angle of incidence.

- Descend the landing gear on level and ref α .

Observe the increase in drag.

Aircraft stable, flaps at 12° and landing gear down.

Note Vi
Note EPR Compare.

1.5.c) Flaps at 25° level.

Insure control of the angle of incidence and glide slope.

- Set flaps at 25°

Observe . action necessary to maintain level.
. variation in the angle of incidence
- increase in drag

Look for ref. α .

1.5.d) Return flaps from 25° to 12° level maintaining

ref α .

<u>check</u> angle of incidence and glide slope.

- Return flaps from 25° to 12°
  - (1) Maintain level (depth)
  - (2) Counter any change in the angle of incidence (throttle)

  Stabilize in new configuration.

  Connect the A.P. on ALT.

(Disconnect the sighting device)

2/ Control of the aircraft during final approach using collimator and for visual approaches.

Set the TC. 125 at:

SFP	-2°4	(	
AAR	6°5	(	
RWL	3100	(	on SET
DTK	024.2	(	

Aircraft preparation and equipment:

TS configuration - V 25° - Vi ≠≠ ref V

2 ILS adjusted on 110.3 - route set at 027

2 FD connected

Initiation: at various altitudes (1000 feet, 600 feet, 1500 feet) adjusted each time always about one point below glide. /7

MTO: ceiling and visibility unlimited unless otherwise indicated.

Now, undertake a series of approaches; turn off the sighting device between approaches to avoid over-heating and for other technological reasons specific to this installation on the simulator.

After each initiation don't forget to:

- return trim to 6 (approx.)
- return throttle to the necessary thrust to maintain level, TS V 25° to ref α .

Finally, at A/T start up you may observe reduction

or increase of power leading to a loss of stability. You may therefore use the other pilot as an A/T.

2.1 A.P. approaches on CRU mode.

- Two complete A.P. approaches with A/T (or co-pilot at the throttle) (Ceiling and Visibility unlimited - Z dep = 1000 ft)

  Control the approaches with the siting device (control glide slope, angle of incidence, and route).

  Note: the unreality of runway visualization (pt impact appears late);

  the appearance of the signal beacon at 500 ft.

  jump in the slope at about 35 ft

- 2 A.P. approaches: lateral control VOR/LOC mode with A/T (Z dep 1000 ft, Ve = 0 (for 1°) Ve = 10 kt updraft (for 2°) (030/10)

  Control glide slope with A.P. PITCH

  Note the difficulty in judging the beginning of the descent, given the poor quality perception of the runway from far off.

2.2 Manual approaches in CRU mode

(Initiation at Z 600 ft in order to see the runway clearly, ceiling and visibility unlimited)

Cut in the right hand place

- 3 manual approaches with A/T

  Insure lateral control as well as control of longitudinal trajectory.

Wind conditions: 1/ - Ve = 0 Vt = 0 /8
2/ - Ve =-5 kt Vt = 3 kt (060/10)
3/ - Ve =-10kt (030/10)

- 2 completely manual approaches

  Insure control of the trajectory and angle of incidence.

Wind conditions: 1/ - Ve = +5 kt   Vt = 0 (210/5)
2/ - Ve = -10 kt Vt + 4 kt (060/15)

2.3 Use of the synthetic runway land mode.
(Initiate at 1500 ft to at least 1 point below glide)
Reconnect the ILS on the runway

- 1 approach entirely on A.P. with A/T.
  Wind conditions: Ve = 0   MTO: ceiling and visibility unlimited
  Control the approach and control: superposition of the two runways
  appearance of the Z at 500 ft
  disappearance of the beginning of the runway at 50 ft
  jump in the rounded position at 35 ft
- 3 approaches begun with A.P. and completed manually with A/TL. /9

Take manual controls at various altitudes.

1/ - Z begin manual = 400 ft - Wind: Ve = -5 kt Vt = 0
MTO: unlimited (030/5)

2/ - Z begin manual = 600 ft - Wind: Ve = -5 kt Vt = 5 kt
ceiling 600 ft poor visibility (070/12)

3/ - Z Begin manual = 800 ft - Wind: Ve = -10 kt Vt = 0
ceiling 600 ft poor visibility (030/10)

2.4 Visual approaches with and without siting device (CRU mode)
(Initiate at 600 ft, 1 point below glide, poor visibility ≠≠ 5 km)
These approaches will be recorded on the G.C.A. cut ILS at right position

- 3 visual approaches without collimator (MTO conditions
- 3 visual approaches with collimator on CRU (identical in
(both cases

The 3 wind conditions are:

. VE = +10 kts   Vt = 5 kt (180/14)

. gradient no. 1

. Ve = -10 kts   Vt = 0   (030/10)

3 Instrument approaches using collimator

Set TC. 125 at: same as above. Verify on SET and pass on LAND.

Aircraft and equipment preparation: identical.

Initiation: 1500 ft, 1 to 2 points below glide, M = 43 T, MTO variable with each approach

Indications from the preceding paragraph remain in force (cut TC. 125 between approaches, regulate trim and throttle after each initiation, A/T by co-pilot)

The beginning of each approach is made with A.P. with A/T. The decision altitude and begin manual altitude are set at th beginning of each approach.

There is, of course, no question of obtaining a MERCURY qualification. However, it would be well to follow a certain procedure:

. verify A.P. sequences if needed

/ have a crew member announce approach signal starting at 500 ft

(500 ft - throttle
(400 ft
(400 ft
(400 ft
(400 ft
(100 ft
(80 ft
(60 ft
(50 ft
(40 ft
(DECISION:
(Response (landing or
(R/G

Finally, in the case of a fly by it will be ordered by the TC. 125 pilot.

Pil/ TC. 125	M N	Copil.
"R/G flaps 9'	adjust EPR flaps retracted	
Initiate R/G by pressing palm switch and making rotation		Observe Announce vario
landing gear up	landing gear up	0

Pilot procedure for fly by: bring to vector speed, on slope points (new position) then, after a few seconds, the total energy chevrons.

6 approaches should be done and a few more if time permits

/10

APPROACHES	MTO CONDITIONS				DECISION HEIGHT	RETURN TO MANUAL HEIGHT	
	Ve	Vt	Ceiling				
1	- 5 kt	0	250 ft	1500 m	200 ft	500 ft	(030/ 5)
2	-10 kt	5 kt	250 ft	800 m	200 ft	800 ft	(070/12)
3	- 5 kt	0	150 ft	400 m	100 ft	400 ft	(030/ 5)
4	+ 5 kt	5 kt	80 ft	300 m	100 ft	600 ft	(070/10)RG
5	+ 5kt	5 kt	100 ft	300 m	100 ft	600 ft	(350/10)
6	0	0	60 ft	200 m	35 ft	200 ft	
7	- 5kt	5 kt	50 ft	150 m	35 ft	500 ft	(070/10)

Note: Don't forget, before beginning each approach:

- the decision altitude you selected (posted on the radio)
- the return to manual altitude (the auto throttle may be used all the way to the end if desired).

PHASE 2:EVALUATION

/11

The first phase, designed to acquaint you with the system and help you acquire the necessary reflexes, is relatively structured. Contrary to this, the second phase is much more flexible. In the following pages we make some suggestions to help you organize the evaluation rather than giving you a detailed program to follow.

These suggestions have been divided into "modules"

Each "MODULE" treats 10 to 12 approaches viewed from the same perspective.

Thus:

- MODULE 1 is based on "visuals"
- MODULE 1 a is a complement to module 1 which should push the evaluation of a single VMC use of the siting device to limit conditions.
- MODULE 2 deals with "category 2 approaches"
- MODULE 3 deals with "category 3 approaches"

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Each module done separately, takes about an hour. The two hour evaluation therefore, includes two modules.

Nevertheless, don't consider the modules as inviolate units; they are only a collection of approach selections and may be "mixed-up".

Thus:

- a pilot working for a company which uses the VMC mode of the siting device exclusively, may follow module 1 and most of the approaches in module 1a, with, for example, two detailed approaches from module 2 and one from module 3 for information.
- a pilot working for a company using mainly category 3 approaches may follow module 1 (a sort of "trunk" to be followed systematically), and use 1 or two from module 1a and almost all of module 3.

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The work of the TC. 125 can be divided into: /12

- piloting a trajectory at the controls (stick inverter bar)
- piloting from an angle of incidence with throttle (using the bias of the total slope chevrons)
- Piloting in a trajectory is the most interesting. Piloting from an angle of incidence becomes easy after a few hours of training: this quickly becomes an act-reflex from key signals process which poses no problem.

For this reason, pilots are advised not to waste time on evaluations or dissipating their attentions by learning throttle maneuvers of secondary importance, better to insure: a priori, the angle of incidence (therefore speed using the auto-throttle or, better cause it is more flexible, by the "instructor" pilot in the left hand seat). Piloting the angle of incidence may be suggested at the end of the evaluation to pilots who feel at ease with the system, or those who ask specifically.

MB: all approaches are to be systematically recorded on tape.

MODULE 1: Basic "visual approaches"

This is the basic model which should be carefully followed by all pilots.

All approaches in this module will be executed with:

- no posted turbulence
- average weather conditions day or night (going from clear CAVOK to minimum conditions 300 ft/1500 m at the end of the session).
- moderate to no wind (10 kt max, thus creating light turbulence in the simulator) without gradient:

Approaches: the first 4 with initiation at 600 ft.

<u>1.1</u> Visual approach without ILS, day, 2NM visibility, wind calm, manual (without A.P., without siting device, without DV).

<u>1.2</u> Same as above but using the siting device (for comparison).

<u>1.3</u> Visual approach, without ILS, night, very good visibility, wind calm, manual (without A.P., without siting device, without DV).

1.4 Same as above with the siting device (for comparison) /13
(After these 4 approaches, the session will be inter-
(rupted for a discussion (in practice the session
(should be recessed and the siting device turned off
(so it can cool down. This will also relax the pilot
(and give him a chance to analize the approaches he
(has just made while they are fresh in his mind).
(
(Comparing approaches with or without the siting
(device, how much the siting device helps piloting on
(the trajectory, helps to maintain the glide slope,
((perhaps by comparing two successive recorded ap-
(proaches with and without the siting device).
(Remarks on the siting device, advice for follow-up,
(recall of the flexible method which consists of
(letting the elements "breathe", and the consequence
(of these. Variations on the trajectory seem greater
(than they are in reality.
(Etc. . . . .

The following approaches are made with initiation at 1500 ft.

4 IFR approaches, with ILS, with weather conditions minimal (300 ft/1500 m), 3/4 head wind 10 kt alternating from left to right (in a hazardous fashion).

These approaches will correspond to operating conditions on a "mono-pilot" since the second pilot does no piloting but is only there for safety (of the speed restriction we spoke of in the introduction).

1.5 A.P. approach (with imperative cit-off A.P. at 250 ft, it's use below 250 ft is forbidden and is expressed by the program "HME".AP = 250 ft"), without siting device, with DV.

1.6 Same as above but using siting device (for comparison)

(MB: same wind conditions for these two approaches).

1.7 Use DV, without siting device.

1.8 Use siting device without DV, (for comparison).
(MB: same wind condition for these two approaches)

(Here, recess, comments, aid from the siting device
(in following the trajectory on IFR. Followed by
(a vertical alignment, lateral alignment. Advice
(for the next try (1.6) of the left siting device
(run, after having followed A.P. work on the siting
(device. Possible comparison of trajectory and work
(load between 1.7 and 1.8).

2 IFR approaches with A.P., with breakdown (pilot is /14
warned of the possible risk of breakdown).

1.9 Approach identical to 1.5 but with a breakdown:
a deviation of average intensity beginning at 400 ft.

1.10 Approach identical to 1.6 same breakdown as above
(MB: same wind condition for these two approaches)
(Recess, comments, aid given by the siting device
(during approach and under breakdown conditions.
(Question: why was the A.P. cut-off? (Test pilot's
(ability to analyze). Deviation detected by DV,
(siting device. Help in regaining the correct tra-
(jectory, compare information.

Possible repetition of these approaches if the pilot wants to review.

MODULE 1A Visual approaches "to the limits"

The second module follows the first for pilots for whom the siting device will be only for VMC use (for example, companies operating on secondary terrain, or on international terrain in under-developed countries).

Very important note:

Allow for use of the siting device under "limit conditions" at least for the simulator, as simulation characteristics are not always excellent, the piloting may be difficult under nominal conditions which would in reality be easy to handle.

– – – – – – – –

All approaches in this module are:

- for day or night with excellent ceiling, visibility, and weather conditions (CAVOK)
- initiation at 1100 ft.

Towards the middle of this module the pilot may take the throttle to pilot the angle of incidence, if he is at ease with the system and if he asks specifically to do so. Whatever happens, a short breathing should take place here to help: recall the principles, reference angle of incidence, presetting the total slope chevrons, magnitude of corrections.

3 approaches with an axial wind. /15

<u>1a1</u>. Visual approach without siting device 20 kt head wind.

<u>1a2</u>. Same as above, with siting device (for comparison).

<u>1a3</u>. Visual device with siting device, 10 kt tail wind.

(Recess. Pilot ability of the glide slope trajectory:
(corrections having suggested magnitude (twice) spread),
(reflex maintenance of speed vector before and after
(runway threshold (in fact, from suggested touchdown
(point). Possible comparison of tapes of approaches
(1and 2.

2 approaches with cross wind.

<u>1a4</u>. Visual approach with siting device, 10 kt 3/4 right headwind.

<u>1a5</u>. Visual approach with siting device, 15 kt 3/4 left tail wind.

(Recess. Pilot ability on lateral, correcting for
(axial wind. Use of route indicators to return to

(course and maintain runway access.)

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2 approaches with wind gradient. These approaches are fairly difficult on the simulator the wind gradients simulated being exceptional (although they correspond to conditions actually encountered). These approaches are restricted to pilots who have done well on the preceding ones. The others should practice with various wind conditions (limits: 10 kt updraft, 10 kt tail wind, 10 kt cross wind).

<u>1a6</u>. Visual approach, without siting device, with gradient 1.

<u>1a7</u>. Same as above, with siting device.

(Recess. Value of siting device. To detect deviation
(during the final approach without prolonging the tra-
(jectory too much. Comparison of the slope in
(approaches 6 and 7 (tape).

2 sleep slope approaches (no wind or gradient)

<u>1a8</u>. Visual approach without siting device, at 4.5° slope.

<u>1a9</u>. Same as above, with siting device (for comparison). /16
(Slope indicators must be set beforehand, SFP = -5°)

(Recess. Comparison of slopes actually followed.
((Tapes of trajectory from the vertical).

- - - - - - - -

Supplementary approaches: review from among those found most difficult in module 1a.

- -

MODULE 2 "Category 2" approaches

In this module, category 2 approaches are presented in the order of the increasing difficulty ending with A.P. breakdown. Recesses should be taken every 3 or 4 approaches (but not between two consecutive approaches without then with the siting device for comparison).

For all of these approaches:

- wind calm, turbulence negligible;
- the crew is the minimum for "precision category 2 approaches: HD 100 ft/PVP 300 m".
- all initiations are made at 1500 ft.

2.1 A.P. approach (+D.V.) completed with siting device. Conditions 120 ft/300 m. The A.P. is on from the onset, but an HME of 300 ft (imperative cut-off at 300 ft). The pilot follows the A.P. on the siting device and completes the approach between 300 ft. and the HD Landing.

2.2 In triangle approach D.V. (without A.P.) up to HD. Conditions 120 ft/340 m. Landing.

2.3 Same as above. Same conditions, but with siting device (for comparison) and with auto throttle.

2.4 Same as above. Same conditions, with siting device, but manual throttle (statistical per 4).

2.5 Same as 2.3, same conditions (100 ft/300 m), but 0/0 posted to back off on throttle.

2.6 The whole approach is made by A.P. HME: 80 ft (imperative cut-off at 80 ft) Conditions: 120 ft/350 m. Approach followed by DV (without siting device), with auto throttle.

A.P. breakdown (slight deviation) at 120 ft. Normal land- /17
ing with A.P. disconnected.

2.7. Same as 2.6 with siting device instead of DV.

2.8 Etc.... Change according to results of preceding approaches. (Possibly with a wind gradient if the pilot is at ease with the system.

(During recesses from the session, comment on:
(
(aid of the siting device in decisions
(
(comparison of DV manual approaches and those with the
(siting device (compare tapes)
(
(comparison of final approach on A.P. breakdown using
(DV and siting device.
(
(etc...

During all these approaches, the instructor will play the role of co-pilot, and a mechanic (sent by the invited company or provided by the C.E.V.) may, for companies needing a three man crew, complete the crew. Work distribution and phraseology to be defined will be prepared elsewhere.

MODULE 3 "Category 3" approaches

In this module, with special orientation towards precision, category 3 approaches (variables defined below), a three man crew is imperative. A mechanic may be proposed by the C.E.V. with simplified checklists adapted to the approaches presented.

The approaches are in three groups.

---

4 "performance" approaches:
(-HD = 0
(-variable light wind
(-visibility 50 m, ceiling 0
(- initiation at 1500 ft

3.1 and 3.2 Manual approach with siting device. In order not to tire the pilot unnecessarily, approach is made with A.P. from 1500 to 600 ft (pilot /18

"following" on the stick, observing the siting device, from 600 ft to landing with the siting device alone).

3.3 and 3.4 Two similar approaches, but disconnect A.P. at 200 ft.

IMPORTANT NOTE CONCERNING APPROACHES 3.1 to 3.4. These four approaches are category 3 approaches with no decision height whose last phase is completed entirely on the siting device (600 ft. then 200 ft.).

These approaches are not meant to be operation. Their goal is:

- to put the pilot at ease piloting with the siting device at low altitude with 0 visibility (in preparation for more operational approaches)
- to furnish systematic performance study dossiers for official services.

- - - - - - - -

4 approaches with an operational system (A.P. + siting device) after breakdown with visual references. For these approaches:

(- HD = 35 ft
(- throttle forbidden on A.P. (siting device only)
(- variable light wind
(- initiate at 600 ft
(- "forecast" meteo 125 m visibility

3.5 and 3.6 Posted conditions 40 ft/150 m. A.P. approach with siting device surveillance. Complete A.P. breakdown at 35 ft. Landing a priori.

3.7 Identical approach, posted conditions 40 ft/125m., A.P. breakdown is a slow role starting at 80 ft.

3.8 Same as above without A.P. breakdown, posted conditions 0/0 to force power to siting device.

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4 approaches with an operational system (A.P. = siting device) after A.P. breakdown without visual reference. In this case definitions are as follows:

- an Alert Height (A.H.) (here 150 ft) such that: A.P. breakdown before the A.H. prompts a fly by (on the siting device) - an A.P. breakdown after A.H. leaves the possibility of siting device approach.
- A classic Decision Height (D.H.), at which a fly by takes place if there are not sufficient visual references.

A specific phraseology was discussed (in a separate document) and will be reviewed in a crew briefing in order to avoid all confusion. /19

Conditions for these approaches:
(- A.H. = 150   D.H. = 35 or 25 ft (see below)
(- throttle not connected by A.P. (diting device only)
(- variable light wind
(- initiation at 600 ft
(- forecast "meteo 125 m visibility (see below)

3.9 A.P. approach observed on the siting device D.H. = 35 ft. forecast meteo: 40 ft/125 m, posted meteo: identical. Complete breakdown of A.P. (alarm with disconnect) at 140 ft a priori, the pilot should continue with the siting device and land (visibility correct to D.H.)

3.10 A.P. approach observe on siting device. D.H. = 35 ft. forecast meteo 40 ft/125 m, posted meteo 0/0. Complete A.P. breakdown at 100 ft. A priori, the pilot should follow with the siting device up to 35 ft/ (D.H.) and fly by with the siting device failing visual references.

3.11 A.P. approach observed on siting device. H.D. = 25 ft. This approach (just as the following one) is reserved for pilots making specific request (Companies using this type of D.H.). Forecast meteo

30 ft/125m. Posted meteo 30 ft/125 m. Complete breakdown of A.P. at 140 ft. A priori, follow on the siting device up to D.H. and land visually.

3.12 Same as above. Posted meteo 0/0 to necessitate throttle at H.D. 25 ft.

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(During recesses, comments:
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(- reason for power on? (when throttle used)
(
(-aid of the siting device on approach up to D.H.
(with visual references.
(
(- possibility of relaying A.P. to the siting device
(in case of breakdown (integration of the piloting
(loop)
(
(- opinions on category 3 with A.P. and isting device
(system operational after breakdown:
(- with visual references
(- without visual references
((always using D.H.)
(- opinions on A.H.
(
(- possibilities of sliding device fly by at low
(altitude
(
(- possibilities of limiting dangerous occurrences
(below 50 ft.
(
(- etc.....